



Cazadores de Crecidas (Flood Chasers)

Monitoring floods in urban rivers and basins



Objectives

Overall goal: Continue the recent developments of the Working Group (WP) by improving the capture of flash flood videos and optimizing the performance of the software being developed by the WG for processing the flood images recorded by citizens. The discharges estimated on the basis of crowdsourced data will be reported to the authorities for flood hazard management.

Specific goals:

- Give citizens the chance to share flood videos through a website to be later analyzed by the WG.
 - Work on two new pillars for recording higher quality videos:
 - 1) Selection of favorite sites for video recording identified by the WG together with the local Civil Defense personnel previously trained (by the WG) on video capture. A field survey is conducted in order to assess such topographic characteristics of the site as required for video processing.
 - 2) Automation of video processing at fixed gauging stations using security cameras.
- These pillars require constant technological development at every stage of the process, namely: during video recording and processing, as well as during data transfer to authorities.
- Continue the development required by each stage so as to maximize systematization and minimize human intervention. The goal is to optimize the software developed by the WG using tailor-made hardware.

Description of citizen participation

Citizens, firefighters, civil defense staff, and law enforcement personnel record videos of flash floods in urban rivers and basins. Then, the videos are sent to a team of scientists who will process the relevant data. The material can be sent through the project's website and social networks, or by contacting members of the GDT and sharing it by e-mail.

Type of citizen science project

Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.

The project is led by the Faculty of Exact, Physical and Natural Sciences (FCEFYN, in Spanish) of the National University of Córdoba (UNC, in Spanish). It is supported by the following institutions:

- National Scientific and Technical Research Council (CONICET, in Spanish) of Argentina
- Ministry of Public Services of the Province of Córdoba
- Provincial Administration of Water Resources of Córdoba

Status. In progress.

Time frame. 10/01/2014 – N/A

Frequency of project execution. Seasonal (on a particular season of the year)

Participation period. On a sustained basis.

Scope of the initiative. International (two or more countries).

Geographic scope. Córdoba, Tucumán, Salta and Paraguay.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 1 to 50.

Action/s involving citizen participation

- Problem identification.
- Data collection.
- Phenomenon monitoring.

Technological device/tool required.

- Cell phone
- Photographic camera

Recruitment methods. Through news programs, social media (Twitter) and workshops carried out in different towns.

Replicability. In the provinces of Tucumán and Salta.

Scalability. Every year, the number of participants increases significantly.

Open access to data. The main findings and knowledge are transferred to society through social media and by means of the reports prepared by project members.

Feedback. Participants create a set of guidelines which are incorporated into the new stages of the project.

Linkage with state agency/government.

It has the institutional support of the following entities:

- Ministry of Public Services of the Province of Córdoba
- Provincial Administration of Water Resources of Córdoba
- Ministry of Education of the Province of Córdoba

Institutional funds. Extension secretariats of the universities leading this initiative. Ministry of Public Services of the Province of Córdoba. Provincial Administration of Water Resources of Córdoba. CONICET.

Awards/distinctions. –

Classification of knowledge areas (OECD).

ENGINEERING AND TECHNOLOGY/ Environmental engineering
ENGINEERING AND TECHNOLOGY/ Civil Engineering

Project leaders.

- Antoine Patalano, Facultad de Ciencias Exactas, Físicas y Naturales (FCEFYN)/Universidad Nacional de Córdoba (UNC) y Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET).
- Leandro Masso, FCEFYN/UNC y CONICET.
- Carlos Marcelo García Rodríguez, FCEFYN/UNC y CONICET.

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